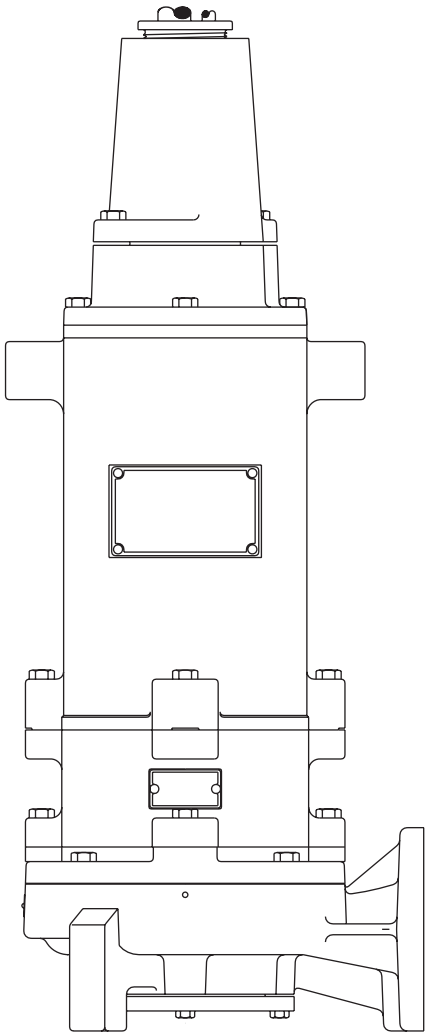
HYDROMATIC®

HPGB750/1000/1500

Submersible Grinder Pumps



NOTE! To the installer: Please make sure you provide this manual to the owner of the pumping equpment or to the responsible party who maintains the system.

Pentair Water™

CAUTION!

Read these safety warnings first before installing, servicing, or operating any pump.

GENERAL

1. Most accidents can be avoided by using ***COMMON SENSE.***
2. Read the operation and maintenance instruction manual supplied with the pump.
3. Do not wear loose clothing that can become entangled in the impeller or other moving parts.
4. This pump is designed to handle materials which could cause illness or disease through direct exposure.

   Wear adequate protective clothing when working on the pump or piping.

ELECTRICAL

WARNING: Only qualified persons shall conduct services and installations of this pump. The pump must be wired by a qualified electrician, using an approved starter box and switching device.

5. To reduce the risk of electrical shock, pump must be properly grounded in accordance with the National Electric Code and all applicable state and local codes and ordinances.
6. To reduce risk of electrical shock, disconnect the pump from the power source before handling or servicing.
7. Any wiring to be done on pumps should be done by a qualified electrician.
8 Never operate a pump with a power cord that has frayed or brittle insulation.
9. Never let cords or plugs lay in water.
10. Never handle connected power cords with wet hands.

PUMPS

11. Pump builds up heat and pressure during operation, allow time for pump to cool before handling or servicing.
12. Only qualified personnel should install, operate or repair pump.
13. Keep clear of suction and discharge openings. **DO NOT** insert fingers in pump with power connected.
14. Do not pump hazardous material not recommended for pump (flammable, caustic, etc.).
15. Make sure lifting handles are securely fastened each time before lifting.
16. Do not lift pump by the power cord.
17. Do not exceed manufacturers recommendation for maximum performance, as this could cause the motor to overheat.
18. Secure the pump in its operating position so it can not tip over, fall or slide.
19. Keep hands and feet away from impeller when power is connected.
20. Submersible grinder pumps are not approved for use in swimming pools, recreational water installations, decorative fountains or any installation where human contact with the pumped fluid is common.
21. Do not operate pump without safety devices in place.

IMPORTANT! Hydromatic is not responsible for losses, injury or death resulting from a failure to observe these safety precautions, misuse or abuse of pumps or equipment.

GENERAL INFORMATION:

Pump Models: These instructions cover the installation and service of the Hydromatic HPGB750/1000/1500 submersible grinder pumps.

Motor HP & Voltages: These submersible grinder pumps are offered in three phase, 7½, 10 and 15 HP. Voltages will vary according to the application and can be seen in the tables in this manual. Three phase stators are available with dual voltage configurations that will allow either 230V or 460V internal connection.

Electrical Controls: All of these pump models must be used with a control panel. Hydromatic built control panels are designed to supply the correct electrical controls, motor starting equipment and include the circuitry for moisture and heat sensors. It is recommended that a Hydromatic built control panel be used so that all warranties apply.

General Construction: A cross sectional view of the internal workings of the pumps can be seen on page 6. The motor chamber and seal chamber are filled with a high dielectric type oil for improved lubrication and heat transfer of the bearings and motor. Since the bearings have been designed for 50,000 hours of life, the oil should never require replacement under normal operating conditions. An air space above the oil level in both the seal and motor chambers is provided to allow for the expansion of the oil when at operating temperature. The power and control lines are sealed and strain relieved on the outside entrance with a standard cord grip, and internally through the use of a dielectric potting resin surrounding the electrical wires. Internal connection wiring diagrams are shown in Figure 2. All of the pump fasteners and shafts are mad from corrosion resistant stainless steel, while the pump castings are made of ASTM A-48 Class 30 cast iron, and the multi-vane vortex impellers are made from ductile iron.

General Installation: Various configurations and methods of plumbing this series of non-clog pumps may be used; however, for ease of installation and service a Hydromatic rail lift-out system is recommended.

Service: These pumps are to be used for handling sewage, wastewater and storm water only. ***Do not*** use in hazardous locations. These motors must be repaired and serviced only at Hydromatic Authorized Service Centers or at the Hydromatic Factory. Any unauthorized field repair voids warranty.

CAUTION: After the pump is installed and sewage has entered the basin there is "Danger". Sewage water gives off methane and hydrogen sulfide gases, which are poisonous. Never enter a wetwell unless the cover is open for a sufficient period of time to allow fresh air into the basin. It is recommended that a man in the basin has a harness on with a rope to the surface, so that he can be pulled out in case of asphyxiation. It is for this reason that Hydromatic recommends using the rail lift-out system so that no service is required inside the basin.

Motor: Each motor is provided with heat sensor thermostats attached directly to the motor windings. The thermostats open if the motor windings see excessive heat and, in turn, open the motor contactor in the control panel, breaking the power to the pump.

When the motor is stopped due to an overheat condition, it will not start until the motor has cooled and the heat sensor reset button is manually pushed on the front of the Hydromatic control panel. This circuitry is provided in the Hydromatic control panel designs.

The HPGB750/1000/1500 pumps are equipped with internal thermostats. To meet Class H heat rise of 356°F (180°C).

Note: Failure to use proper circuitry and to connect the motor overheat protection in the control panel would negate all warranties.

Motor Seal Failure Warning: The seal chamber is oil filled and provided with moisture sensing probes to detect water leakage through the lower shaft seal. The probes can also detect moisture present in the upper motor housing.

The presence of water energizes a red seal leak warning light at the control panel. This is a warning light only, and does not stop the motor. It indicates a leak has occurred and the pump must be repaired. Normally, this indicates the outboard seal has leaked. Allowing the unit to operate too long after the warning could cause upper seal leakage along with motor failure.

The resistance across the moisture sensing (seal failure) probes, should be checked after a seal leak warning light has lit. This can be done by disconnecting the red and orange control wires from the control panel, and measuring the resistance with an ohm meter between the wires. For a standard, non-explosion proof pump the reading should be 100,000 ohms or greater, and for an explosion-proof pump the reading should be above 30,000 ohms. If the measured values are below those indicated above, the pump may have a lower seal failure and require service.

Note: Hydromatic built control panels supply the correct circuitry for moisture and heat sensor connections. Failure to install the correct circuitry with proper connection would negate warranty.
See Figure 3.

Motor Power Cord, Control Cord and Cord Cap Assembly: Each motor power cord has 4 conductors - white, black, red and green. For a three phase motor the red, black and white conductors connect to the three line leads, and the green is connected to a good ground. Interchanging any two line leads will reverse the rotation of the motor.

Note: Rotation should be clockwise when observed from the top of the pump. This can be checked by noting which direction the pump torques upon initial starting. A properly rotating pump will torque counter-clockwise upon start.

The control cable has 5 conductors - black, white, red, orange and green. White and black connect to the heat sensor terminals in the control panels; red and orange connect to the seal failure terminals in the control panel; and the green connects to the ground in the control panel.

The cord cap is epoxy potted. The cord cap provides for a sealed wire connection with terminals so that connections can be made without breaking the motor seal. This allows the cord cap, with cords, to be removed from the motor. With this arrangement, the cords can be permanently installed in a sealed fitting in the sump. **The control and power cables cannot be spliced!** When the pump is removed for service, the cord cap can stay and be reinstalled when pump is returned.

Note: Each cable has a green ground wire and must be properly grounded per the National Electric Code and local codes.

Electrical Motor Controls: All electrical controls and motor starting equipment should be as specified in these instructions. Consult factory for any acceptable alternates.

Level Sensing Controls: The float level controls maintain the basin sewage water level by controlling pump turn-on and turn-off levels.

1. The lower turn-off control should be set so that the pump stops with the water covering the entire motor housing. Consult the factory for any settings below this point.

2. The upper turn-on control should be set above the lower turn-off control. The exact height between the two controls is determined by the number of pump starts desired and the depth of the basin. A maximum of 10 starts per hour should not be exceeded.

3. The override control is set at a specified height above the upper turn-on control.

4. The alarm control is set about 6" to 12" above the override control.

5. No control should be set above the inlet invert.

Electrical Connections: All electrical wiring must be in accordance with local code and only qualified electricians should make the installations. Complete wiring diagrams are included for use in making the installation. All wires should be checked for shorts to ground with an ohmmeter or megger after the connections are made. This is important, as one grounded wire can cause failure of the pump, control panel or personal injury.

Pump: The fluid end of the pump is field serviceable and can be disassembled in case of wear, damage, plugging or outboard seal failure. The following will describe the disassembly and reassembly process.

REPLACING GRINDER IMPELLER AND GRINDER SHREDDING RING

This is the only disassembly operation allowed in the field. All other repairs must be done at the factory or at an authorized service station.

STANDARD TOOLS REQUIRED:

1. All had socket set.
2. Standard socket wrench set
3. Set of open end wrenches.
4. Plastic hammer.
5. Vise grip pliers.
6. Large screwdriver 5/8" wide blade; heavy handle.
7. Wire brush.
8. Three cornered file.
9. Several smaller screwdrivers.

IMPORTANT - Pump should be thoroughly cleaned of trash and deposits before starting disassembly operations.

CAUTION - DISCONNECT ALL POWER AND CONTROL WIRES TO MOTOR AT CONTROL PANEL BEFORE STARTING DISASSEMBLY OPERATIONS. NEVER RELY ON OPENING CIRCUIT BREAKER ONLY.

DISASSEMBLY OF SHREDDING RING AND IMPELLER

1. Remove screws from holding ring and remove ring.

2. Use two screwdrivers, one each on opposite side of ring and pry shredding ring out. Remove shredding ring.

3. Hold impeller by prying against impeller cutting bar and remove cap screw from end of shaft.

4. Use large screwdriver in slot in end of shaft and bump on cutter vane with plastic hammer. Bump in counterclockwise direction as thread is right hand. It may take several bumps to loosen impeller.

   If impeller cannot be loosened it will be necessary to take unit to service station for service. **DON'T CONTINUE TO POUND ON IMPELLER AS IMPELLER AND SHAFT CAN BE DAMAGED.**

5. If impeller comes off easily clean up and replace if worn.

6. Be sure pump impeller has not loosened when grinder impeller is removed. This can be checked on reassembly of grinder impeller and shredding ring. Tips of impeller cutter vanes should extend about 1/8" below bottom of shredding ring. If more than 1/8" extends below ring it means pump impeller has loosened. See sectional drawing Fig. 1 or Fig. 2.

   Remove grinder impeller and ring as described above and remove bolts from pump case and remove case. Use back off screws in motor mounting plate to pry loose from pump case.

7. After case is removed wrap emery paper around shaft and hold with vise grip pliers. Use cloth on impeller and screw up against shoulder. Now pump can be reassembled.

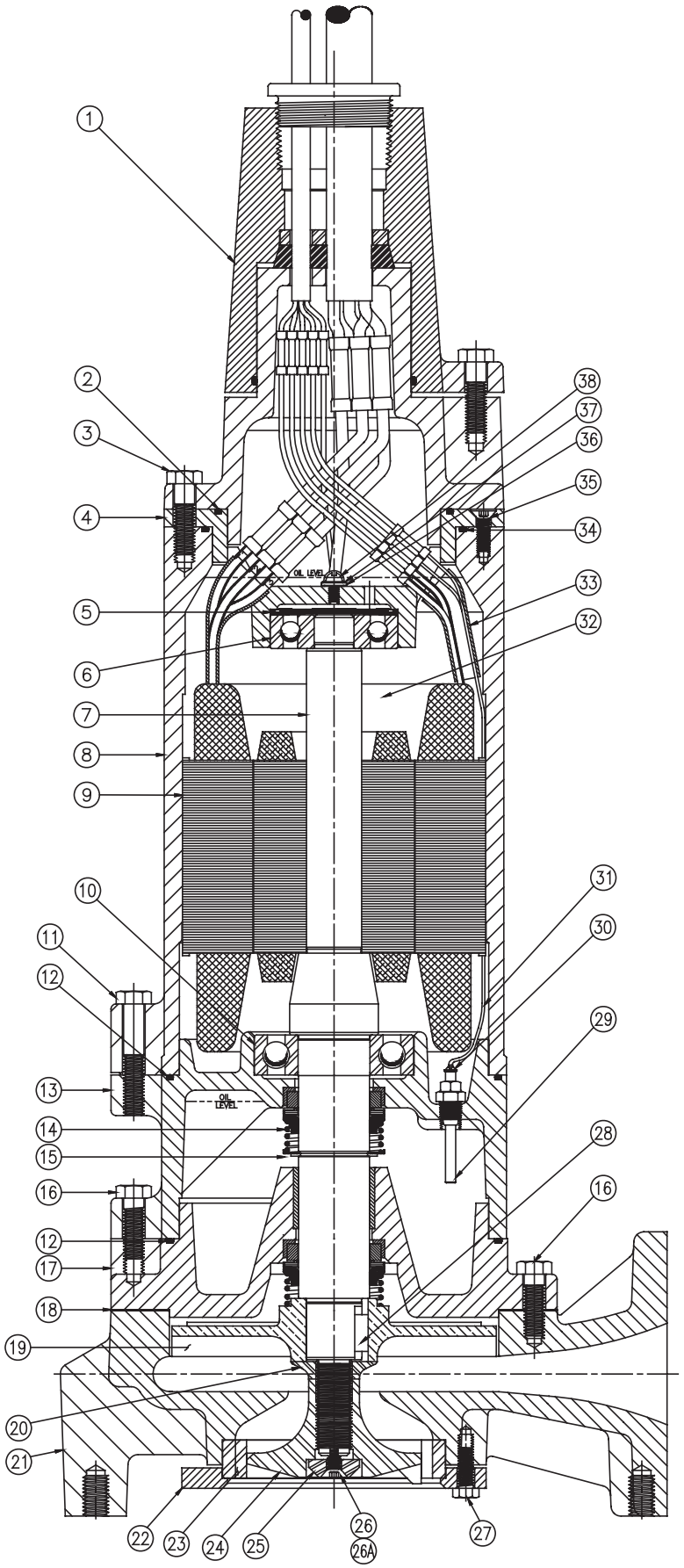
8. Clean all threads with wire brush and file smooth any threads that may be nicked.

9. Use Never-Seeze or other graphite compound on threads before replacing grinder impeller.

10. Be sure cap screw in bottom of shaft is tight. Hold impeller with screwdriver between cutter bar and teeth of shredding ring while tightening cap screw.

11. Be sure impeller turns free by hand after reassembly. Some drag will occur due to seals but there should be no binding or tight spots when turning the grinder impeller.

12. ALWAYS use a rag on the impellers when turning to prevent cutting hands on the sharp corners of shredding ring.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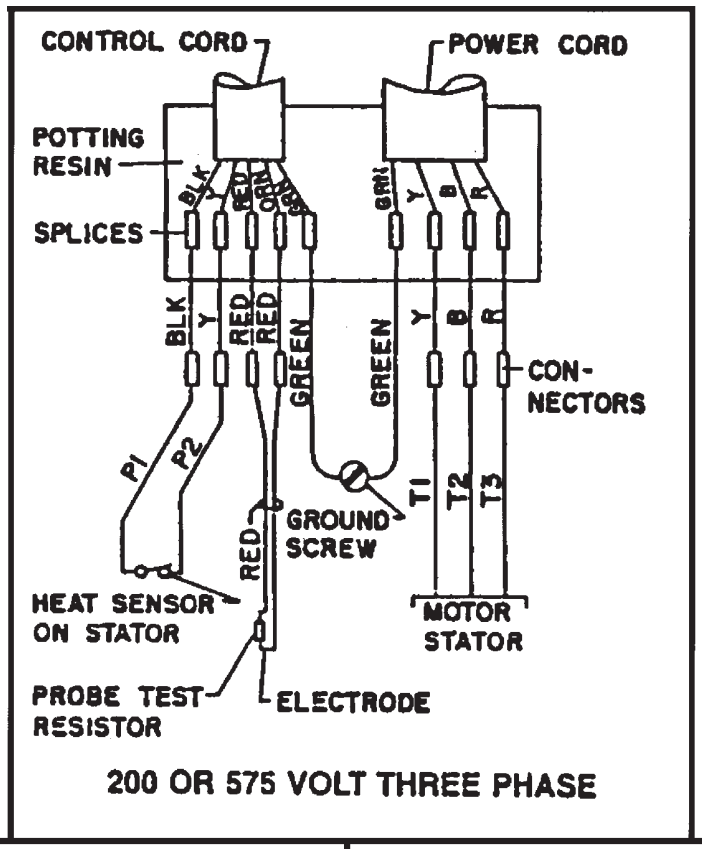
OIL LEVEL
OIL LEVEL

Parts List

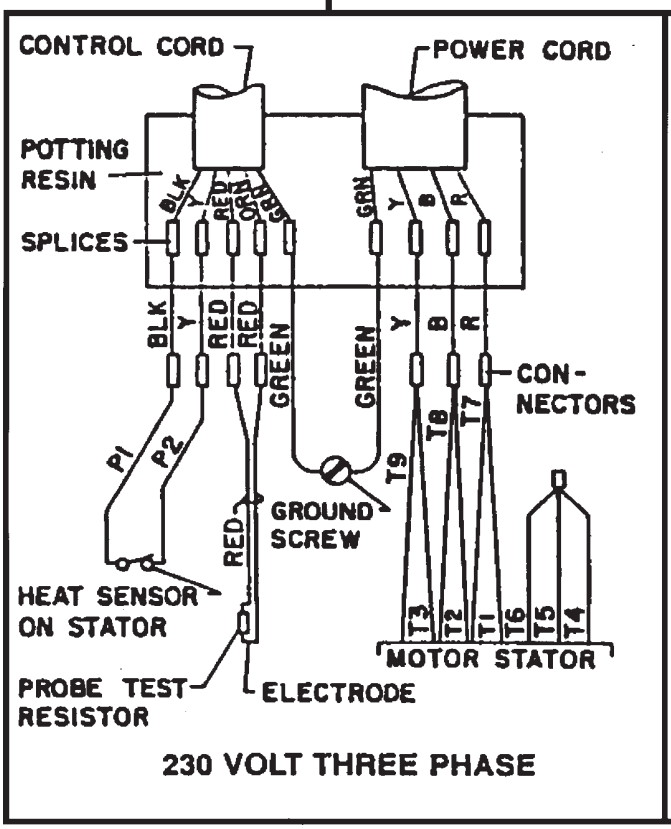
REF. NO.	DESCRIPTION	Part No.	NO. REQ'D
1	Cord cap assembly	see chart	1
2	O-Ring	05876A119	1
3	HHCS 1/2"-13 UNC x 1-3/4"	19103A045	4
4	Upper bearing cap	22873C000	1
5	Load Spring	191331A007	2
6	Ball bearing, upper	08565A032	1
7	Rotor/shaft assembly	see chart	1
	Shaft (only)	27097D100	
8	Motor housing	22874D000	1
9	Stator	see chart	1
10	Ball bearing, lower	08565A026	1
11	HHCS 1/2"-13 UNC x 2-1/2"	19103A048	4
12	O-Ring	05876A121	2
13	Seal housing, upper	22882D010	1
14	Shaft seal	22883A000	2
15	Retaining ring	12558A017	1
16	HHCS 1/2"-13 UNC x 1-1/2"	19103A043	8
17	Seal housing, lower	25991D010	1
18	Gasket	05231A084	1
19	Impeller	see chart	1
20	Impeller washer	27099A000	1
21	Volute	27095E000	1
22	Shredder ring clamp	22587C000	1
23	Shredder ring	22586B010	1
24	Grinder impeller	22584C000	1
25	Impeller retainer	22585A000	1
26	Impeller retaining screw	07597A021	1
26A	Sealant	14550A009	1
27	HHCS 3/8"-16 UNC x 1"	19101A010	1
28	Key	05818A067	1
29	Seal leak probe	25343A100	2
30	Machine screw #6	05454A025	2
31	Electrode wire	22578A100	2
	Resistor (X-PRF only)	22912A000	1
32	Oil	11009A008K	1.8 gal
33	Tube - plastic	10649A116	2
34	O-Ring	05876A120	1
35	Machine screw 5/16"-18 UNC x 1"	07597A017	2
36	Lock washer	06107A016	1
37	Washer	05030A241	1
38	Machine screw 1/4"-20 UNC x 1/2"	05028A002	1
	Pipe-plug 1/4" NPT (not shown)	05022A092	2

Catalog No.	Rotor/Shaft Assembly	Stator	Cord Cap Ass'y (25')	Housing w/ Stator	Impeller
HPGB750M6-2	27098D100	141452031	22872C010	22874D357K	27096D002
HPGB750M3-2	27098D100	141450031	22872C010	22874D362K	
HPGB750M4-2	27098D100	141450031	22872C010	22874D362K	
HPGB750M5-2	27098D100	141456031	22872C011	22874D367K	
HPGB1000M6-2	27098D100	141452031	22872C012	22874D358K	27096D001
HPGB1000M3-2	27098D100	141450031	22872C012	22874D363K	
HPGB1000M4-2	27098D100	141450031	22872C010	22874D363K	
HPGB1000M5-2	27098D100	141456031	22872C010	22874D368K	
HPGB1500M6-2	27098D100	141462031	22872C012	22874D372K	27096D000
HPGB1500M3-2	27098D100	141460031	22872C012	22874D377K	
HPGB1500M4-2	27098D100	141460031	22872C010	22874D377K	
HPGB1500M5-2	27098D100	141466031	22872C010	22874D382K	

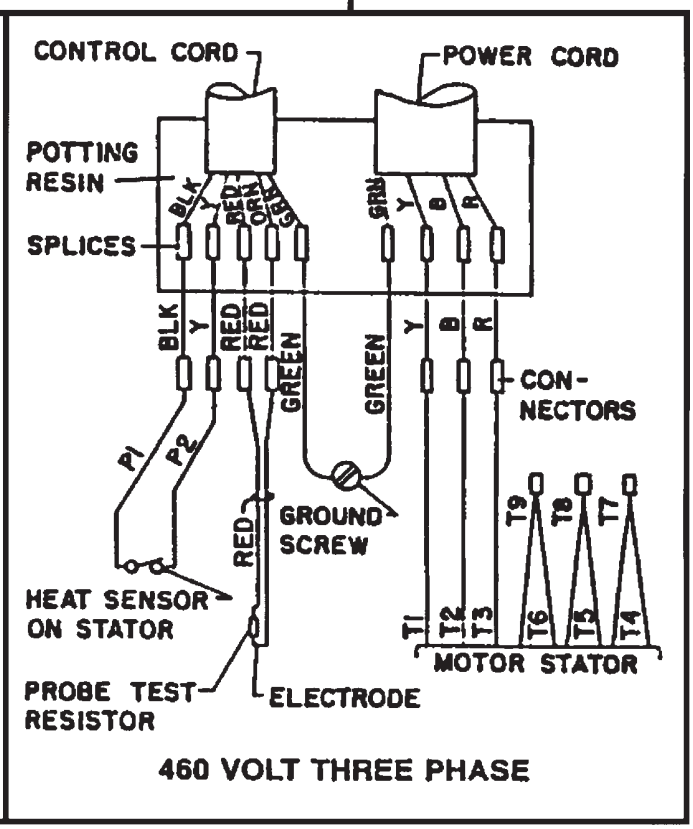
MOTOR INTERNAL CONNECTION DIAGRAMS



200 OR 575 VOLT THREE PHASE

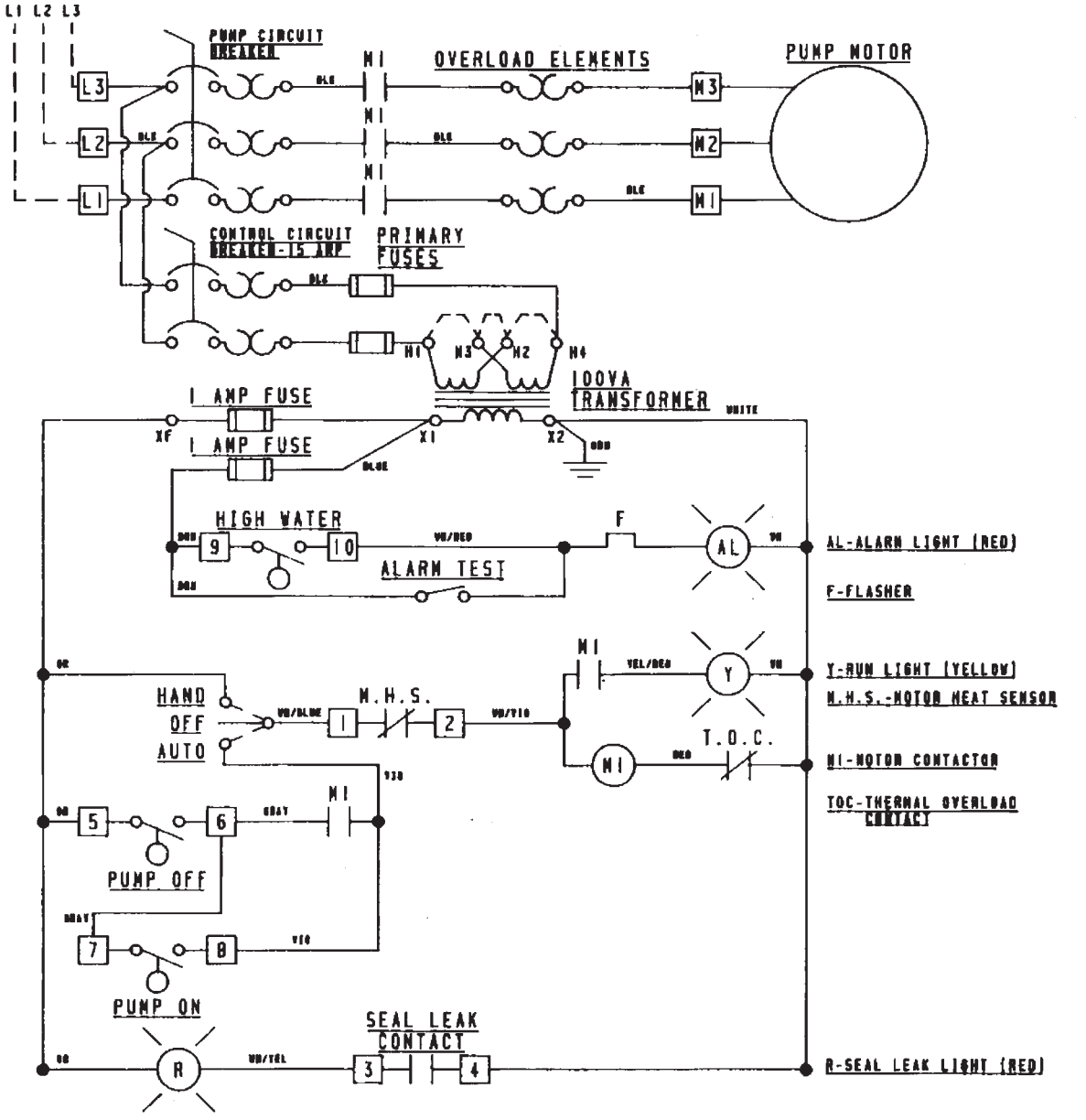


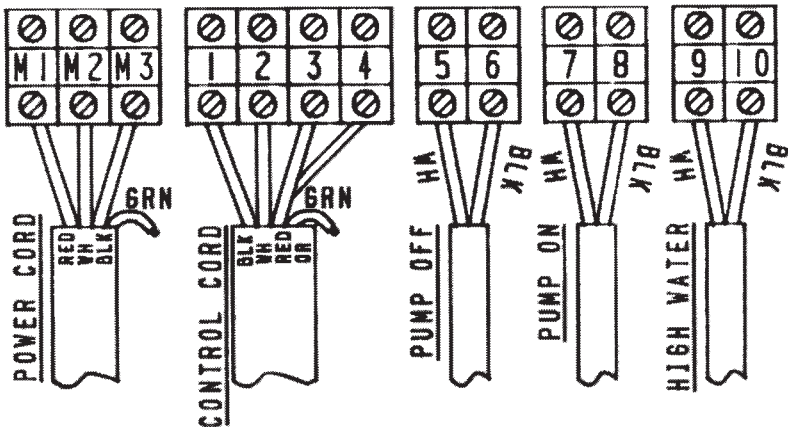
230 VOLT THREE PHASE



460 VOLT THREE PHASE

WIRING DIAGRAM: 200, 230 & 460V, 3ø, SIMPLEX, 7½, 10, & 15 HP

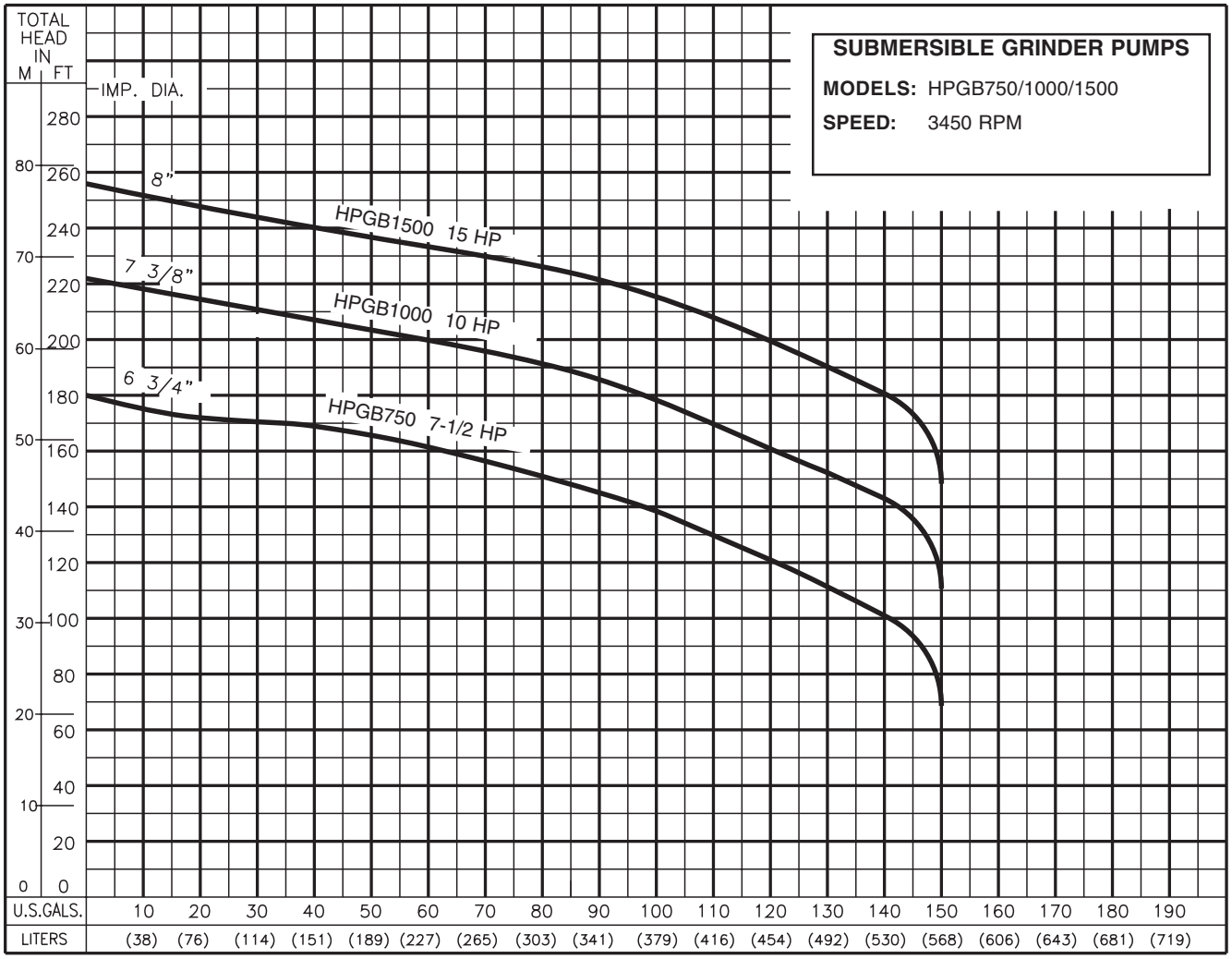




NOTE: CONNECT ALL GREEN WIRES TO GROUND BAR

FLOAT CONTROLS MUST BE RATED FOR 2 AMPS AT 115 VOLTS

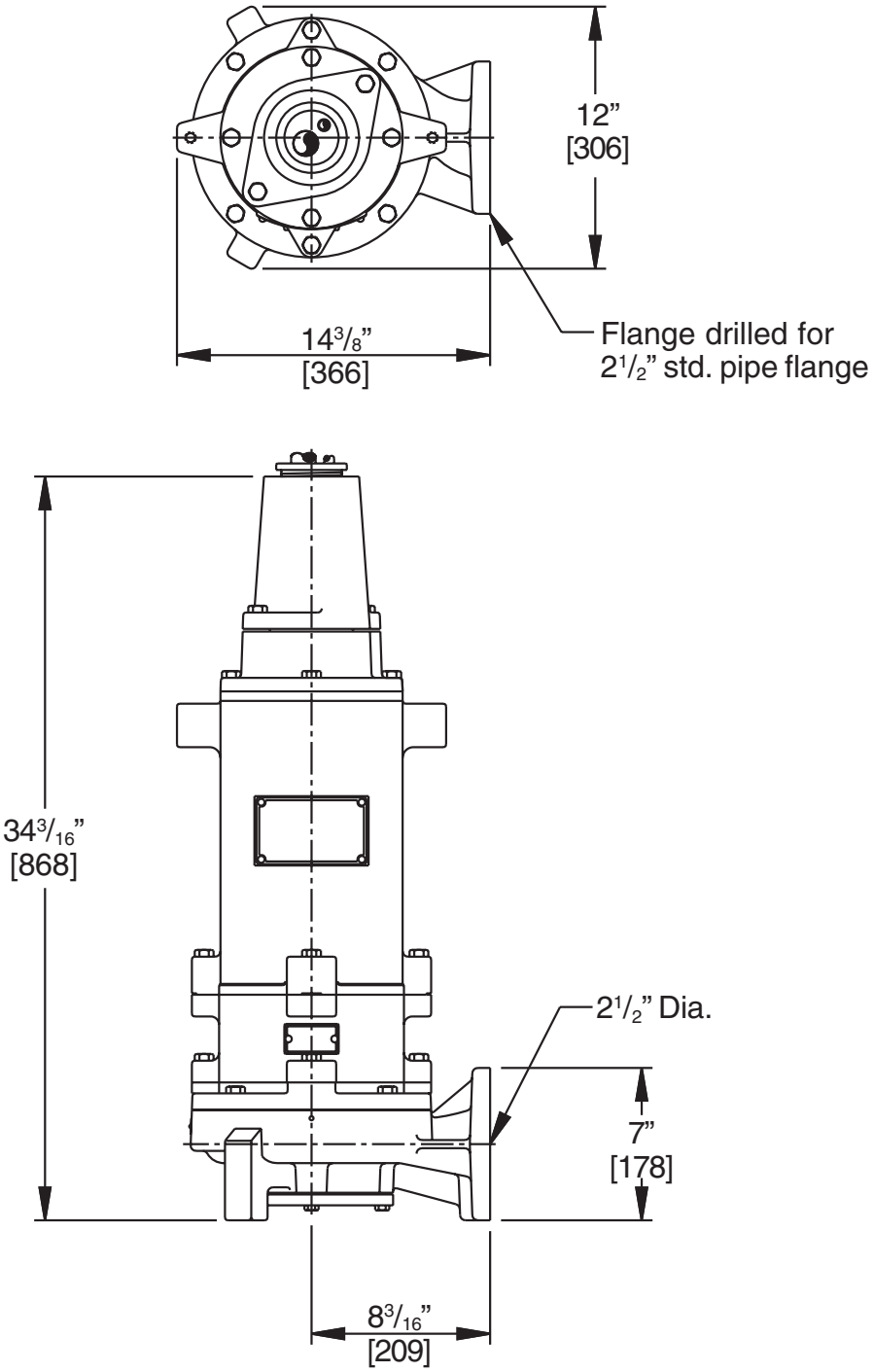
PUMP PERFORMANCE



Available Models	Motor Electrical Data												
Standard	HP	Volts	Phase	Hertz	Start Amps	Run Amps	Service Factor Amps	Run KW	Service Factor KW	Start KVA	Run KVA	NEC Code Letter	Service Factor
HPGB750M6-2	7-1/2	200	3	60	192.7	39.8	47.8	8.1	11.9	66.8	13.8	K	1.2
HPGB750M3-2	7-1/2	230	3	60	167.6	34.6	41.5	8.1	11.9	66.8	13.8	K	1.2
HPGB750M4-2	7-1/2	460	3	60	83.8	17.3	20.8	8.1	11.9	66.8	13.8	K	1.2
HPGB750M5-2	7-1/2	575	3	60	67.0	13.9	16.7	8.1	11.9	66.8	13.8	K	1.2
HPGB1000M6-2	10	200	3	60	192.7	55.7	66.8	10.2	15.5	66.8	19.3	H	1.2
HPGB1000M3-2	10	230	3	60	167.6	48.4	58.1	10.2	15.5	66.8	19.3	H	1.2
HPGB1000M4-2	10	460	3	60	83.8	24.2	29.0	10.2	15.5	66.8	19.3	H	1.2
HPGB1000M5-2	10	575	3	60	67.0	19.4	23.3	10.2	15.5	66.8	19.3	H	1.2
HPGB1500M6-2	15	200	3	60	256.2	68.4	82.1	17.6	19.7	88.7	23.7	G	1.2
HPGB1500M3-2	15	230	3	60	222.8	59.5	71.4	17.6	19.7	88.7	23.7	G	1.2
HPGB1500M4-2	15	460	3	60	111.4	29.8	35.8	17.6	19.7	88.7	23.7	G	1.2
HPGB1500M5-2	15	575	3	60	89.1	23.8	28.6	17.6	19.7	88.7	23.7	G	1.2

PUMP DIMENSIONS

[dimensions in mm]



CHECK LIST IF PUMP DOES NOT OPERATE PROPERLY

CHECKING FOR MOISTURE IN MOTOR - Use ohmmeter or a megger and set on highest scale. Readings on the large power cord between any of the conductors red, black, or white to green conductor or to the motor housing should be greater than 1,000,000 ohms (1 megaohm). Motor probably will run with a lower reading, but if pump is out of service and reading is below 1,000,000 ohms (1 megaohm), the motor housing and stator should be removed and baked in a drying oven at 220°F. This service work should only be done at an authorized service station.

Readings should be taken with line leads disconnected from the control panel.

RESISTANCE OF WINDINGS - Every motor winding has a fixed resistance and winding must check close to the values given below to operate properly. Verification of the proper wiring of a dual voltage motor can also be checked by measuring the motor winding resistance. See the motor electrical data chart. Use an ohmmeter and set to the one ohm scale. Read the resistance with the motor leads disconnected from the pump control panel.

TROUBLE CHECK LIST

Troubles listed are generally caused by the pump. Other trouble can occur from faulty control box operation.

CONDITION	PROBABLE CAUSE
Pump runs but does not pump liquid from basin	1. Pump impeller may be air locked, this occasionally occurs on a new installation. Start and stop pump several times to purge air. 2. Run additional water into basin so that pump will be submerged deeper to clear air. 3. If pump is three phase, rotation may be wrong. See instructions for checking proper rotation. 4. If air does not clear it may be necessary to lift pump out of sealing elbow and start motor to allow pump to pump for a few seconds. Air vent hole is provided in pump case, so some water will flow from this hole when pump is operating. If vent hole gets clogged clean out. 5. If pump has been installed for some time and does not pump, it may be clogged at grinder inlet. 6. Discharge gate valve may be closed. 7. Discharge check valve may be clogged or have a broken clapper. 8. Discharge head may be too high. Check elevation. Maximum pump head at zero flow is shown on pump curve sheet. 9. If above checks do not locate trouble, motor rotor may be loose on shaft which allows motor to run but will not turn impeller or only at low RPM.
Red light comes on at control box.	This indicates some water has leaked past the lower seal and has entered the seal chamber and made contact with the electrode probe. Pump must be removed from basin within approximately two (2) weeks fro replacement of lower seal. This preventative repair will save an expensive motor.

Overload trips at control box and alarm buzzer or flashing red light comes on due to high water level in basin.	1. Push in on red reset button to reset overload. If overload trips again after short run, pump has some damage and must be removed from basin for checking. 2. Trouble may be from clogged grinder causing motor to overload or could be from failed motor. 3. Trouble may be from faulty component in control box. Always check control box before removing pump.
Yellow run light stays on continuously.	1. Indicates H-O-A switch may be in the hand position. 2. Level control switch may have failed causing pump to continue to operate when water is below lower weight, o lower weight may have dropped off. 3. Grinder assembly may be partially clogged causing pump to operate at very reduced capacity. 4. Gate valve or check valve may be clogged causing low pump flow. 5. Pump may be air logged.
Circuit breaker trips.	1. Reset breaker by pushing clear down on handle then back to on position. If breaker trips again in few seconds it indicates excessive load probably caused by a short in the motor or control box. Check out instructions given with control box before pulling pump. 2. If this condition happens after an electrical storm, motor or control box may be damaged by lightning. 3. Resistance reading of the motor with lead wires disconnected from the control box can determine if trouble is in motor or control box.
Pump is noisy and pump rate is low.	1. Grinder assembly may be partially clogged with some foreign objects causing noise and overload on the motor. 2. Grinder impeller may be rubbing on grinder ring due to bent shaft or misalignment.
Grease and solids have accumulated around pump and will not pump out of basin.	1. Lower weight of level switch may be set too high. Set bottom of lower weight even with bottom of inlet flange to grinder. 2. Run pump on hand operation for several minutes with small amount of water running into basin to clean out solids and grease. This allows pump to break suction and surge which will break up the solids. If level switch lower weight is set properly this condition generally will not occur. 3. Trash may have accumulated around lower weight causing pump to turn off too soon. Clean trash from weight and suspension cable.

Pump Notes

Pump Notes

LIMITED PRODUCT WARRANTY

HYDROMATIC® warrants that its products are free from defects in material and workmanship for a period of twelve (12) months from the date of purchase or eighteen (18) months from the date of manufacture, whichever occurs first.

During the warranty period and subject to the conditions hereinafter set forth, **HYDROMATIC**, will repair or replace to the original user or consumer parts which prove defective due to defective materials or workmanship of **HYDROMATIC**. Contact the nearest authorized **HYDROMATIC** distributor, **HYDROMATIC** authorized service center or **HYDROMATIC** for warranty service. At all times, **HYDROMATIC** shall have and possess the sole right and option to determine whether to repair or replace defective equipment, parts or components.

Start up reports and electrical system schematics may be required to support warranty claims. Warranty is effective only if **HYDROMATIC** supplied or authorized control panels are used, where applicable. All dual seal pumps must have seal failure and heat sensors attached, functional and monitored for the warranty to be in effect. If a seal failure should occur, **HYDROMATIC** will only cover the lower seal and labor thereof. If the heat sensor and seal fail sensor is not attached and functional, the warranty is void.

LABOR, ETC. COSTS: HYDROMATIC shall in NO EVENT be responsible or liable for the cost of field labor, removal and/or reinstallation charges of any **HYDROMATIC** product, part or component thereof, or the expense of freight.

THIS WARRANTY WILL NOT APPLY: (a) to defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with printed instructions provided; (b) to failures resulting from abuse, accident or negligence; (c) to normal maintenance services and the parts used in connection with such service; (d) to units which are not installed in accordance with applicable local codes, ordinances and good trade practices; or (e) if the unit is moved from its original installation location; (f) unit is used for purposes other than for what it was designed and manufactured; (g) to any unit which has been repaired or altered by anyone other than **HYDROMATIC**, a **HYDROMATIC** distributor or a **HYDROMATIC** authorized service center and (h) to any unit which has been repaired using non factory specified parts/OEM parts.

RETURN OR REPLACED COMPONENTS: any item to be replaced under this Warranty must be returned to **HYDROMATIC** in Ashland, Ohio, or such other place as **HYDROMATIC** may designate, freight prepaid.

PRODUCT IMPROVEMENTS: HYDROMATIC reserves the right to change or improve its products or any portions thereof without being obligated to provide such a change or improvement for units sold and/or shipped prior to such a change or improvement.

WARRANTY EXCLUSIONS: **HYDROMATIC** MAKES NO EXPRESS OR IMPLIED WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. **HYDROMATIC** SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE.

Some states do not permit some or all of the above warranty limitations and, therefore, such limitations may not apply to you. No warranties or representations at any time made by any representatives of **HYDROMATIC** shall vary or expand the provision hereof.

LIABILITY LIMITATION: IN NO EVENT SHALL **HYDROMATIC** BE LIABLE OR RESPONSIBLE FOR CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES RESULTING FROM OR RELATED IN ANY MANNER TO ANY **HYDROMATIC** PRODUCT OR PARTS THEREOF. PERSONAL INJURY AND/OR PROPERTY DAMAGE MAY RESULT FROM IMPROPER INSTALLATION. **HYDROMATIC** DISCLAIMS ALL LIABILITY, INCLUDING LIABILITY UNDER THIS WARRANTY, FOR IMPROPER INSTALLATION — **HYDROMATIC** RECOMMENDS INSTALLATION BY PROFESSIONALS.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

In the absence of suitable proof of this purchase date, the effective date of this warranty will be based upon the date of manufacture.

HYDROMATIC®
Pentair Water

– Your Authorized Local Distributor –

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